



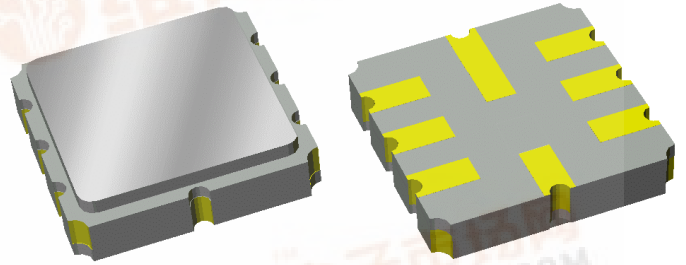
# Part Number 855844

## 225 MHz SAW Filter

### Data Sheet

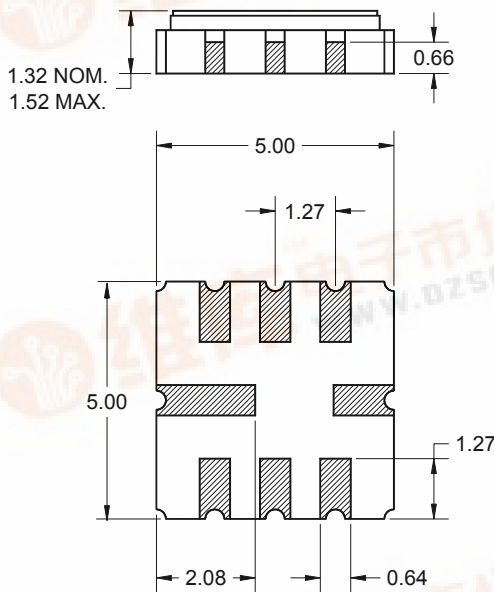
#### Features

- For GSM IF applications
- Usable bandwidth of 160 kHz
- Low loss
- High attenuation
- Balanced operation
- Ceramic Surface Mount Package (SMP)
- Small size



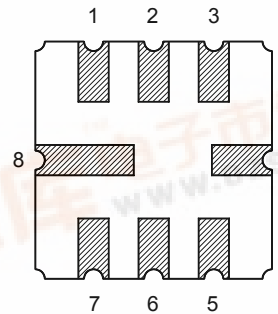
#### Package

Surface Mount 5.00 x 5.00 x 1.32 mm



#### Pin Configuration

Bottom View



Pin No.	Description
1	Input
2	Input return
5	Output
6	Output return
3,4,7,8	Case ground

Dimensions shown are nominal in millimeters  
 All tolerances are  $\pm 0.15$ mm except overall length and width  $+0.15/-0.10$ mm

Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated

Terminations: Au plating 0.5 - 1.0 $\mu$ m,  
 over a 2 - 6 $\mu$ m Ni plating



# Data Sheet

## Electrical Specifications <sup>(1)</sup>

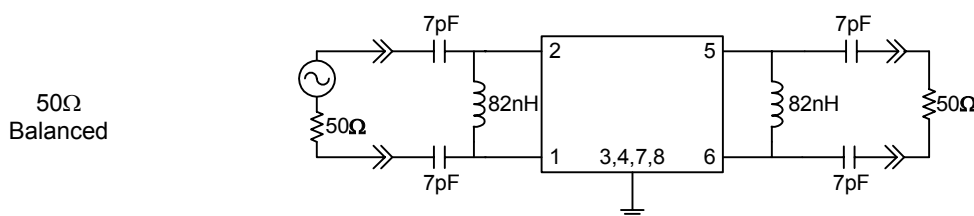
Operating Temperature Range: <sup>(2)</sup> -20 to +70 °C

Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Center Frequency, <math>f_o</math></b>	-	225	-	MHz
<b>Insertion Loss at 225 MHz</b>				
Excluding losses due to matching	-	2.3	3.8	dB
Including losses in matching test circuit shown below	-	3.5	5.0	dB
<b>Amplitude Variation</b>				
224.9200 - 225.0800 MHz	-	0.5	3.2	dB p-p
224.9325 - 225.0675 MHz	-	0.3	2.2	dB p-p
<b>Rejection <sup>(4)</sup></b>				
223 - 224.4 MHz	35	45	-	MHz
224.4 - 224.6 MHz	26	32	-	MHz
224.6 - 224.8 MHz	5	11	-	MHz
225.2 - 225.4 MHz	5	13	-	MHz
225.4 - 225.6 MHz	26	30	-	MHz
225.6 - 227.0 MHz	35	39	-	MHz
<b>Out of Band Rejection</b>				
10 - 215 MHz	42	45	-	dB
235 - 750 MHz	42	45	-	dB
<b>Group Delay Ripple</b>				
224.9200 - 225.0800 MHz	-	0.9	1.8	$\mu$ sec
224.9325 - 225.0675 MHz	-	0.6	1.6	$\mu$ sec
224.9500 - 225.0500 MHz	-	0.2	1.3	$\mu$ sec
<b>Optimal Source Impedance: <sup>(5)</sup></b>	-	704 $\Omega$   332nH	-	$\Omega$
<b>Optimal Load Impedance: <sup>(5)</sup></b>	-	739 $\Omega$   359nH	-	$\Omega$

### Notes:

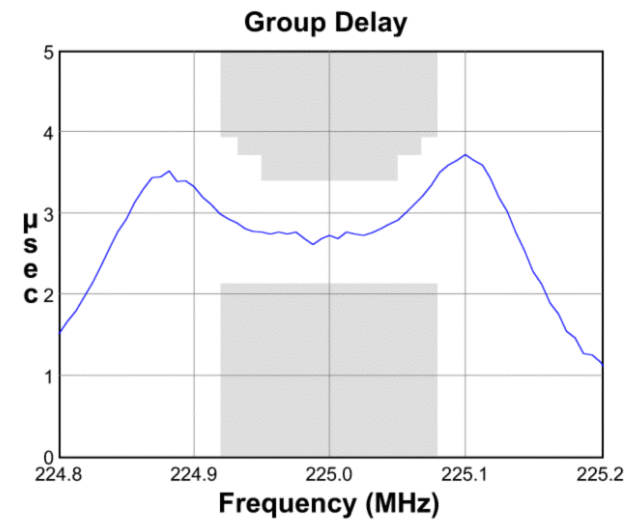
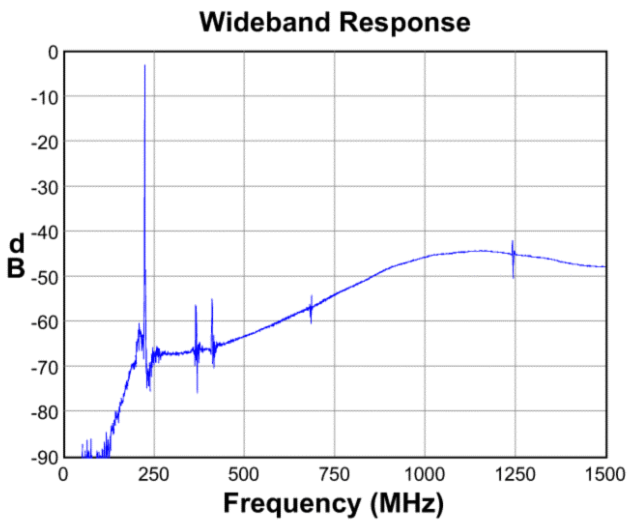
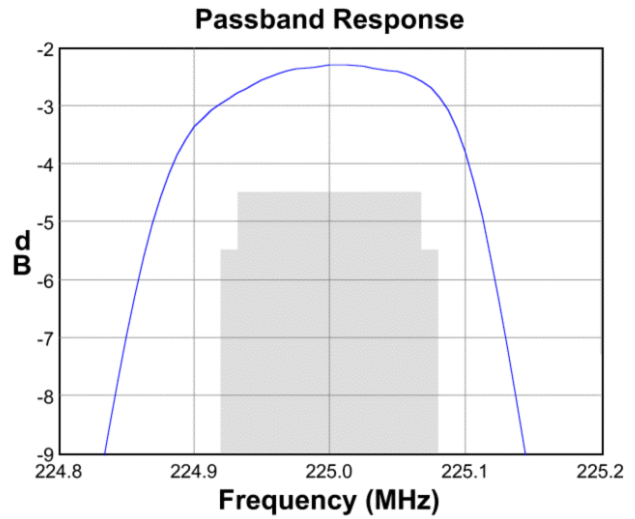
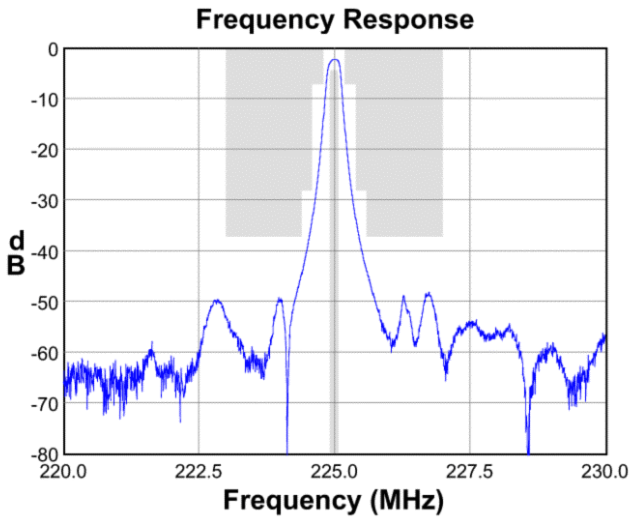
- All specifications are based on the test circuit shown below
- In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
- Electrical margin has been built into the design to account for the variations due to manufacturing tolerances
- Relative to insertion loss at 225 MHz
- This is the complex conjugate of the unmatched filter's impedance resulting in maximum power transfer

### Test Circuit:

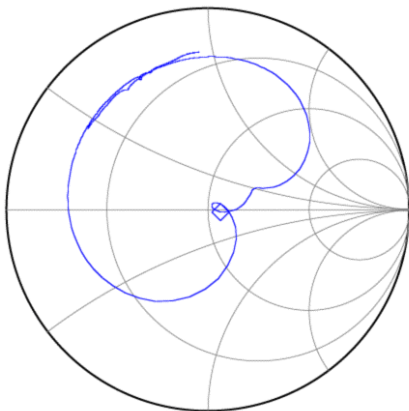


**Data Sheet**

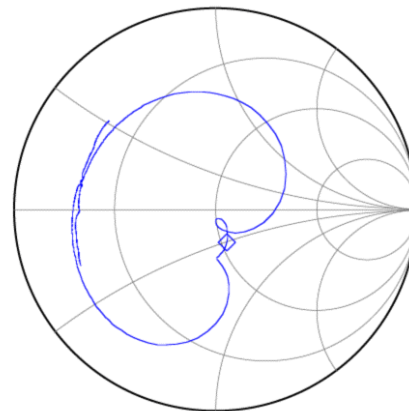
**Typical Performance (at +25°C)**



**Input Smith Chart**



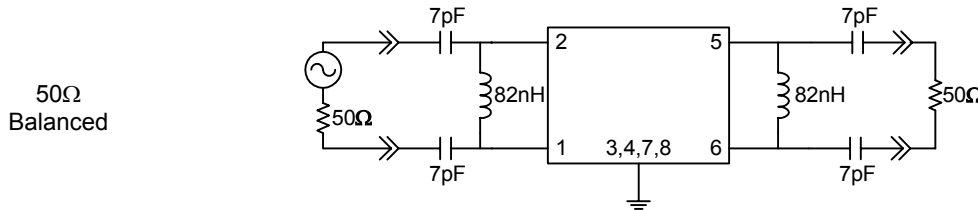
**Output Smith Chart**



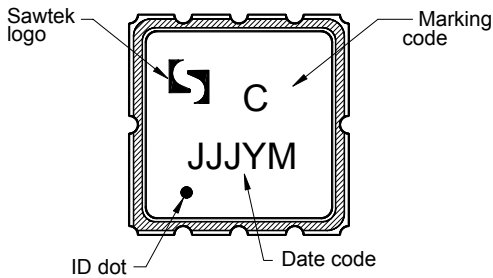
**Data Sheet**

**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics

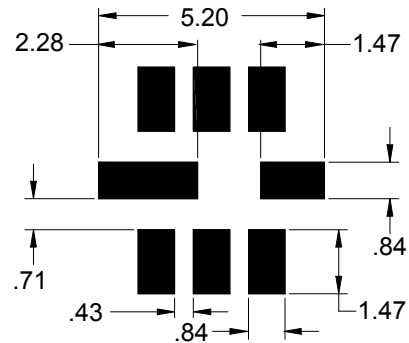


**Marking**



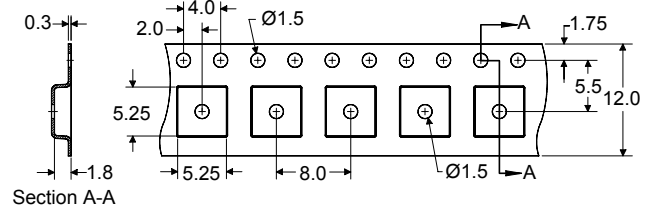
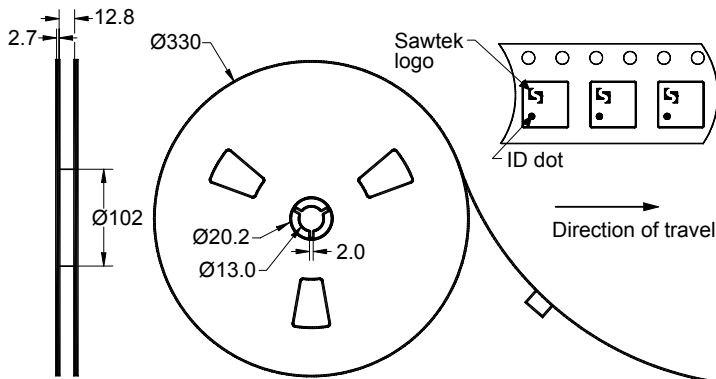
The date code consists of: JJJ = Julian day,  
Y = last digit of year, M = manufacturing site code

**PCB Footprint**



This footprint represents a recommendation only  
Dimensions shown are nominal in millimeters

**Tape and Reel**




Dimensions shown are nominal in millimeters  
Packaging quantity: 4000 units/reel

# Data Sheet

## Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-20	+70	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°C

### Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

## Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[Other Technical Information](#)

## Contact Information



PO Box 609501  
 Orlando, FL 32860-9501  
 USA

Phone: +1 (407) 886-8860  
 Fax: +1 (407) 886-7061  
 Email: [custservice@sawtek.com](mailto:custservice@sawtek.com)  
 Web: [www.sawtek.com](http://www.sawtek.com)

Or contact one of our worldwide network of [sales offices, representatives or distributors](#)